AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Original) A method for merging a first mesh and a second mesh that differ from each other in density, the method comprising:

a first step of determining length of an edge of a portion that becomes a boundary between the first mesh and the second mesh;

a second step of adjusting size of a first group of polygons including the edge of the portion that becomes the boundary based on the length determined in the first step, and of adjusting size of a second group of polygons other than the first group of polygons so that an adjustment ratio is smaller as a distance between a position of each of the second group of polygons and the portion that becomes the boundary is greater, each of the first and second groups of polygons being part of polygons structuring the first mesh and of polygons structuring the second mesh; and

a third step of merging the first mesh and the second mesh in each of which the polygons are adjusted.

2. (Original) The method according to claim 1,

wherein in the second step, of the polygons structuring each of the first mesh and the second mesh,

the size of the first group of polygons is adjusted first; and

the size of the second group of polygons is adjusted by determining adjustment order of length of an edge so that edges to be adjusted first are edges contacting any of the first group of polygons out of edges structuring each of the second group of polygons and that edges to be adjusted next and later are edges contacting any of the edges processed in the immediately preceding adjustment in turn, and by adjusting length of plural edges corresponding to the same order based on an intermediate value between an average value of the plural edges and an average value before adjustment of plural edges corresponding to any order prior to the same order.

3. (Original) The method according to claim 2, wherein in the first step, the length of the edge of the portion that becomes the boundary is determined by obtaining an average value of the length of the edge of the portion that becomes the boundary in each of the first and second meshes before adjustment and by selecting an intermediate value of the average values.

4. (Original) The method according to claim 3, wherein in the first step, as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment, a mean value of the average values is selected.

5. (Original) The method according to claim 3, wherein in the first step, as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment, either one of the average values is selected.

Claims 6 – 8 (Cancelled)

9. (Original) An apparatus for merging a first mesh and a second mesh that differ from each other in density, the apparatus comprising:

an edge length determination portion for determining length of an edge of a portion that becomes a boundary between the first mesh and the second mesh;

a polygon adjustment portion for adjusting size of a first group of polygons including the edge of the portion that becomes the boundary based on the length determined by the edge length determination portion, and for adjusting size of a second group of polygons other than the first group of polygons so that an adjustment ratio is smaller as a distance between a position of each of the second group of polygons and the portion that becomes the boundary is greater, each of the first and second groups of polygons being part of polygons structuring the first mesh and of polygons structuring the second mesh; and

a mesh merge processing portion for merging the first mesh and the second mesh in each of which the polygons are adjusted.

10. (Original) The apparatus according to claim 9,

wherein, of the polygons structuring each of the first mesh and the second mesh, the polygon adjustment portion adjusts the size of the first group of polygons first; and

the polygon adjustment portion adjusts the size of the second group of polygons by determining adjustment order of length of an edge so that edges to be adjusted first are edges contacting any of the first group of polygons out of edges structuring each of the second group of

polygons and that edges to be adjusted next and later are edges contacting any of the edges processed in the immediately preceding adjustment in turn, and by adjusting length of plural edges corresponding to the same order based on an intermediate value between an average value of the plural edges and an average value before adjustment of plural edges corresponding to any order prior to the same order.

11. (Original) The apparatus according to claim 10, wherein the edge length determination portion determines the length of the edge of the portion that becomes the boundary by obtaining an average value of the length of the edge of the portion that becomes the boundary in each of the first and second meshes before adjustment and by selecting an intermediate value of the average values.

12. (Original) The apparatus according to claim 11, wherein the edge length determination portion selects a mean value of the average values as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment.

13. (Original) The apparatus according to claim 11, wherein the edge length determination portion selects either one of the average values as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment.

14. (Original) A computer readable medium storing a computer program for merging a first mesh and a second mesh that differ from each other in density, the program making a computer perform the processing of:

a first processing of determining length of an edge of a portion that becomes a boundary between the first mesh and the second mesh;

a second processing of adjusting size of a first group of polygons including the edge of the portion that becomes the boundary based on the length determined in the first processing, and of adjusting size of a second group of polygons other than the first group of polygons so that an adjustment ratio is smaller as a distance between a position of each of the second group of polygons and the portion that becomes the boundary is greater, each of the first and second groups of polygons being part of polygons structuring the first mesh and of polygons structuring the second mesh; and

a third processing of merging the first mesh and the second mesh in each of which the polygons are adjusted.

15. (Original) The computer readable medium according to claim 14, wherein in the second processing, of the polygons structuring each of the first mesh and the second mesh,

the size of the first group of polygons is adjusted first; and

the size of the second group of polygons is adjusted by determining adjustment order of length of an edge so that edges to be adjusted first are edges contacting any of the first group of polygons out of edges structuring each of the second group of polygons and that edges to be adjusted next and later are edges contacting any of the edges processed in the immediately preceding adjustment in turn, and by adjusting length of plural edges corresponding to the same

order based on an intermediate value between an average value of the plural edges and an average value before adjustment of plural edges corresponding to any order prior to the same order.

16. (Original) The computer readable medium according to claim 15, wherein in the first processing, the length of the edge of the portion that becomes the boundary is determined by obtaining an average value of the length of the edge of the portion that becomes the boundary in each of the first and second meshes before adjustment and by selecting an intermediate value of the average values.

17. (Original) The computer readable medium according to claim 16, wherein in the first processing, as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment, a mean value of the average values is selected.

18. (Original) The computer readable medium according to claim 16, wherein in the first processing, as the intermediate value of the average values of the edge length of the portion that becomes the boundary in each of the first and second meshes before adjustment, either one of the average values is selected.

19. (New) A method for merging a first mesh and a second mesh that differ from each other in density, the method comprising:

a first step of determining a first length of an edge of a portion that becomes a boundary between the first mesh and the second mesh;

a second step of adjusting size of a first group of polygons including the edge of the portion that becomes the boundary based on the first length determined in the first step;

a third step of determining a second length of an edge of a portion that neighbors to the first group of polygons based on the first length determined in the first step and the length of an edge of a second group of polygons that neighbor the first group of polygons;

a forth step of adjusting size of a second group of polygons based on the second length determined in the third step, each of the first and second groups of polygons being part of polygons structuring the first mesh and of polygons structuring the second mesh; and

a fifth step of merging the first mesh and the second mesh in each of which the polygons are adjusted.